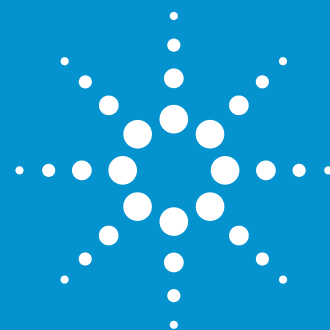




Agilent RapidFire 300 High-throughput Mass Spectrometry System



Revolutionary Label-Free Technology



The Measure of Confidence



Agilent Technologies

The fastest solution to your drug discovery challenges

Streamline your drug discovery workflow with the Agilent RapidFire 300 High-throughput Mass Spectrometry system. The system integrates fast, serial, online sample purification with mass spectrometric analysis. RapidFire instrumentation in your laboratory can eliminate bottlenecks by providing high quality data greater than 10 times faster than conventional LC/MS methods for many applications. Unattended 24-hour operation enables researches to devote time to other tasks. Alternatively, Agilent's RapidFire contract research service enables laboratories to outsource these studies with guaranteed fast turnaround times.

The RapidFire 300 High-throughput Mass Spectrometry system eliminates the need for sample preparation and delivers samples to the mass spectrometer at unprecedented speeds.



Label-Free, without compromising data quality

Use of Agilent RapidFire technology requires no labels or surrogate substrates. The system enables detection of native compounds without the need for fluorescence, luminescence or radioactivity. The result is more relevant data without compromises.

Maximum day-to-day productivity

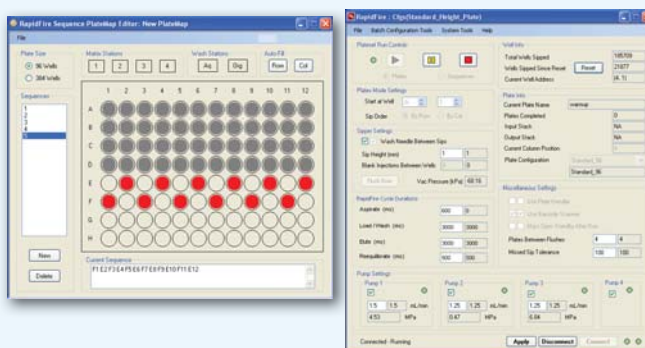
With high speed microscale valves, multiplate capacity, and walkaway automation, the throughput capabilities of the Agilent RapidFire 300 system are unmatched. Reductions in processing time, scientist intervention, and solvent usage result in maximal laboratory efficiency.

Agilent reliability, of course

Agilent's commitment to innovation and performance improvement continues to produce new instruments with industry-leading speed, sensitivity, and performance. But one thing always remains constant: robust, Agilent-reliable performance and ease-of-use.

RapidFire software simplifies and automates data analysis

Agilent RapidFire software enables a broad range of capabilities. The user interface is easy to use and network enabled, allowing users to monitor instrument progress from their desktop. The plate map editor enables sequence-based functionality. Injection in any plate configuration allows for custom design of sequences which may be saved. RapidFire Integrator transforms direct mass spectrometry data output into data files similar to that of plate reader-based systems, compatible with standard LIMS, and other databases.



Turning mass spectrometers

Agilent's proprietary RapidFire 300 technology provides researchers with a significant competitive edge by decreasing the time required for screening. Each sample is processed in just six to eight seconds, yielding much faster throughput than traditional mass spectrometry-based methods. A single 384 well plate can be read in under 40 minutes.



The Agilent RapidFire system requires no up-front sample preparation. The system samples directly from quenched assay plates without the need for offline solid-phase extraction or any other sample desalting or preprocessing. There are five steps in the RapidFire 300 sample preparation and injection cycle:

- Sip (withdraw) sample
- Inject sample on RapidFire cartridge
- Wash cartridge (desalt)
- Elute sample and inject into mass spectrometer
- Re-equilibrate cartridge
- Repeat

Flexibility in screening

The sequence-based injection of the RapidFire facilitates an expanded plate map functionality such that individual wells of each plate can be analyzed using separate mass spectrometric methods. The system can accommodate up to eighteen standard 96 or 384 well plates.

into plate readers

“The RapidFire 300 has been developed to meet investigator demand for high quality drug discovery data with a short turnaround time.”

Dr. Can Özbal, Director RapidFire Operations, Agilent Technologies



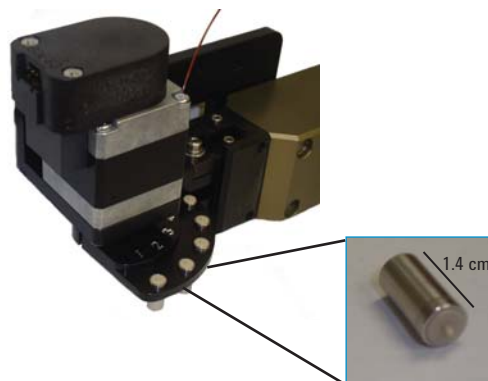
LABEL-FREE TECHNOLOGY WITHOUT COMPROMISES

Unattended 24-hour operation

The Agilent RapidFire 300 system incorporates a variety of features that enable unattended, 24-hour operation, permitting researchers to dedicate time to other tasks and to process samples on the instrument overnight without the need for operator supervision. Automated cartridge changing hardware can extend unattended operating hours or be loaded with multiple packing materials for method development applications. Integrated optical sensors automatically detect fluid flow and the software flags any aberrant samples.

Solid phase extraction cartridges

RapidFire cartridges are available in a variety of chemistries including: C4, Cyano, C18, Phenyl, C8, HILIC, and custom packing materials. The assay development cartridge cassette allows for the use of six different packing materials per run enabling analysis by multiple chemistries in a method development mode.



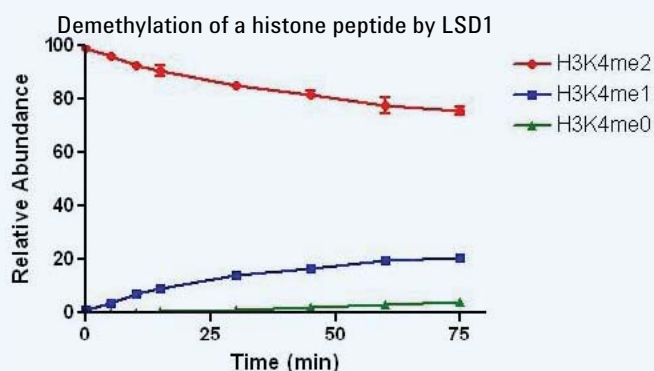
Robust, reliable results at unparalleled throughputs

HIGH THROUGHPUT SCREENING:

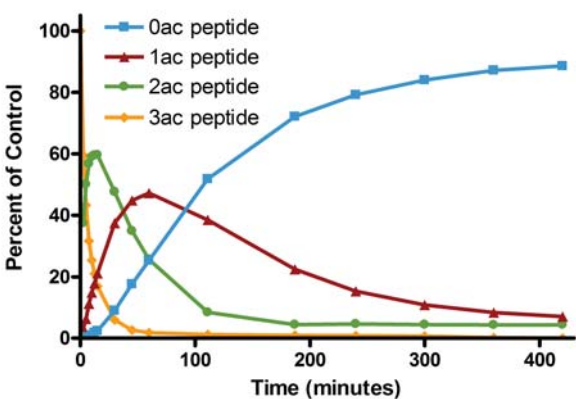
Challenging targets at unprecedented speeds



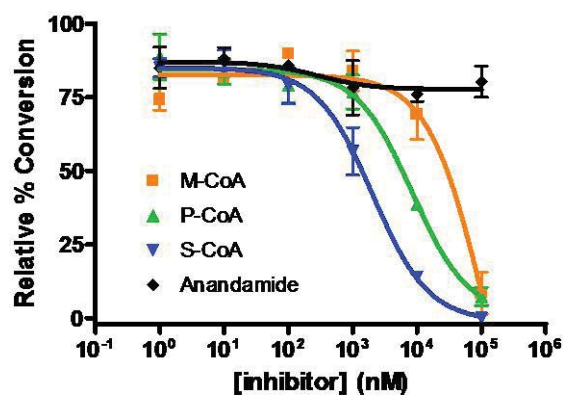
The RapidFire system is a proven tool for lead discovery, enhancing both method development and screening of biochemical assays.



Enzymatic removal of one or both methyl groups from the lysine-4 position of the doubly methylated peptide H3K4me2 (Anaspec) by LSD1 (Enzo) as monitored by RapidFire 300 mass spectrometry.



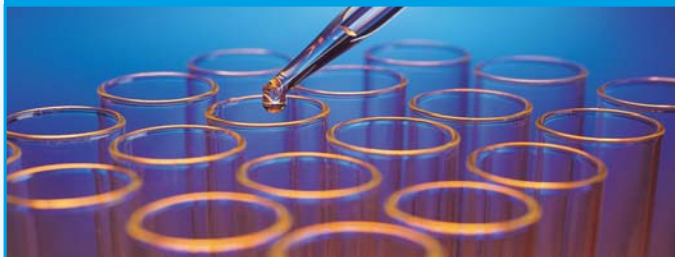
Sequential deacetylation of a p53 peptide containing three acetylated lysine residues by SIRT1.



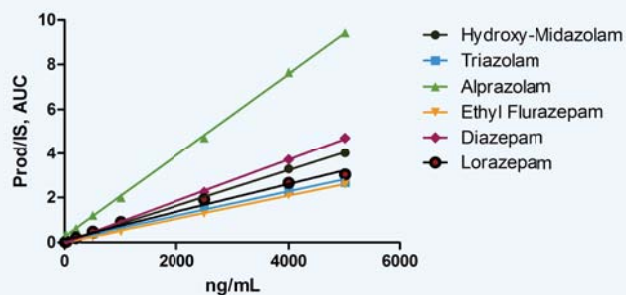
Inhibition experiments on acetyl-CoA carboxylase using myristoyl-CoA (M-CoA), palmitoyl-CoA (P-CoA), stearoyl-CoA (S-CoA), and the negative control compound anandamide.

CLINICAL RESEARCH:

Direct determination of compounds in urine



R^2 values greater than 0.99 were achieved across a panel of benzodiazepines over a linear range of 10 ng/mL – 5000 ng/mL. Accuracy and precision were consistent between multiplexed and singleton runs of each compound of the benzodiazepine panel.

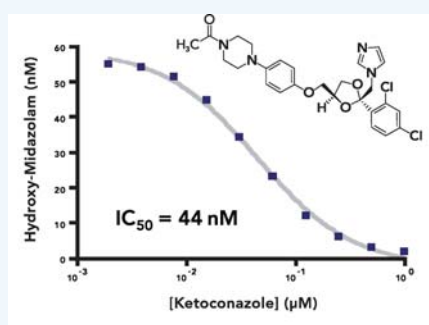
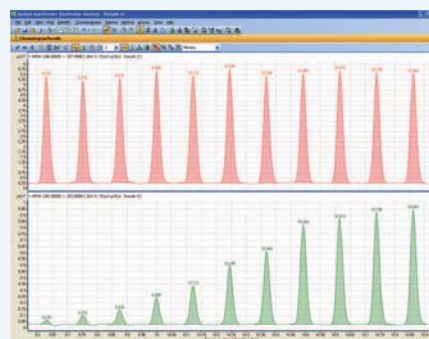


ADME:

Results comparable to traditional LC-MS methods



A wide range of ADME assays can be analyzed using the RapidFire 300 system including CYP inhibition, metabolic stability and permeability assays. This IC_{50} curve demonstrates the conversion of midazolam to hydroxymidazolam in the presence of the inhibitor ketoconazole. The amount of hydroxymidazolam product formed was measured and normalized to an internal standard (D4-1'-Hydroxymidazolam).



Experience clearly better productivity and save resources, too

The Agilent RapidFire 300 High-throughput Mass Spectrometry system is engineered using precisely controlled nanofluidics. The result is a significant decrease in solvent usage and a reduction in overall waste including hazardous solvents that require difficult disposal processes.

Contract research services

The Agilent RapidFire Assay Analysis Service increases your lab's productivity while preserving your assay method integrity. Simply send Agilent your quenched ADME assay plates and the analysis will be performed using RapidFire-MS, returning data results within 3 days. Analysis of traditional ADME assays (i.e. CYP inhibition, metabolic stability, and permeability) or customized analysis services are available.

The Agilent Value Promise: 10 years of guaranteed performance

In addition to our continually evolving products, Agilent offers the industry's only 10-year value guarantee. Agilent guarantees you at least 10 years of instrument use from your date of purchase, or we will credit you with the residual value of that system toward an upgraded model. It's our way of assuring you of a safe purchase now and protecting your investment.



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